

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

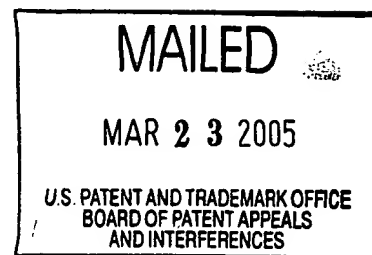
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RONALD E. COLLIER and ANDREY ZAGREBELNY

Appeal No. 2005-0639
Application 09/899,871

ON BRIEF



Before FRANKFORT, NASE, and BAHR, Administrative Patent Judges.

FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 11, 12, 14 and 16 through 22. Claims 1, 3 through 10, 23, 24, 27 and 28, the only other claims remaining in the application, stand allowed. Claims 2, 13, 15, 25 and 26 have been canceled.

Appellants' invention relates to a method and apparatus for removing matter adhered to a polishing pad used in the manufacture of a semiconductor device. Independent claims 11 and 18 are representative of the subject matter on appeal and read as follows:

11. A spray element adapted to be positioned within a polishing system and further adapted to remove matter adhered to a polishing pad of the system by spraying a pressurized fluid upon the polishing pad, wherein the spray element comprises a plurality of nozzles configured to spray the pressurized fluid and one or more adjustable shields arranged about the plurality of nozzles.

18. A method for cleaning a polishing pad, comprising"
moving the polishing pad relative to a spray element, wherein the spray element and polishing pad are positioned within a polishing system such that fluid openings of the spray element are positioned toward the polishing pad;

spraying a pressurized fluid in a pulsating sequence from the spray element upon the polishing pad during said moving; and
removing matter adhered to the polishing pad.

The sole prior art reference of record relied upon by the examiner in rejecting the appealed claims is:

Huey

6,283,840

Sep. 4, 2001
(filed Aug. 3, 1999)

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Claims 11, 12, 14 and 16 through 22 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Huey.¹

Rather than reiterate the conflicting viewpoints advanced by appellants and the examiner regarding the above-noted anticipation rejection, we refer to the examiner's answer (mailed March 17, 2004), appellants' brief (filed October 6, 2003), the reply brief (filed May 17, 2004), and the supplemental appeal brief (filed August 19, 2004) for a full exposition thereof.

OPINION

Having carefully reviewed the anticipation issues raised in this appeal in light of the record before us, we have made the determination that the examiner's rejection of claims 11, 12, 14 and 16 through 22 35 U.S.C. § 102(e) as being anticipated by Huey will not be sustained. Our reasons follow.

¹A rejection of claims 11, 12, 14 and 16 through 22 under 35 U.S.C. § 102(e) as being anticipated by Manfredi (US 6,284,092 B1) set forth in the final rejection mailed May 7, 2003 has now been withdrawn by the examiner. See the examiner's answer, pages 3 and 4.

Looking first to article claim 11, we note that it is directed to "[a] spray element" usable in a polishing system (i.e., "adapted to be positioned within a polishing system") and adapted to remove matter adhered to a polishing pad of the system by spraying pressurized fluid upon the polishing pad. The spray element is further defined as comprising "a plurality of nozzles configured to spray the pressurized fluid and one or more adjustable shields arranged about the plurality of nozzles."

In the present application, the spray element is variously identified in Figures 1, 2, 3a and 4-6 by reference characters (16), (26), (30) and (40). Claims 11, 12, 14, 16 and 17 on appeal appear to be directed to the spray element (30, 40) seen in Figures 3a, 3b and 4-6, which is adapted to be positioned within a polishing system like that seen in Figure 1 of appellants' drawings, and adapted to remove matter adhered to a polishing pad (12) of the system by spraying pressurized fluid (38) upon the polishing pad. The spray element (30, 40) has an outer housing (42) carrying a plurality of nozzles (36, 56) configured to spray the pressurized fluid (38), a mounting structure (50) to couple the spray element to the polishing system, and one or more adjustable shields (44) arranged about the plurality of nozzles.

On page 23 of the specification, it is indicated that the shields (44) are arranged upon the sides of outer casing (42) in order to minimize the spray of the pressurized fluid outside the vicinity of spray element (40) and are preferably extended beyond the projection of the nozzles (36, 56) in order to minimize lateral spray of the pressurized fluid. The specification goes on to indicate that "the position of shields 44 relative to outer casing (42) may be adjusted by sliding shields 44 via slot 46" (page 23, lines 8-9), that shields (44) may extend within 5 mm of the polishing pad, and that upon determining the proper position of shields (44), fastener (48) may be tightened so that the desired position of the shields is maintained.

Returning to the examiner's rejection of claim 11 under 35 U.S.C. § 102(e) as being anticipated by Huey, we note that the examiner has taken the position that

Huey discloses a system having a polishing pad (54), a spray element (72), shields (60 and see fig. 4 in which the shields are adjustable because the arm moves which adjust the position of the shields), and pressure between (10 to 60 psi, see col. 4, line 24) (answer, page 3).

In response to appellants' argument that the mobility of the arm assembly (60) of Huey pointed to by the examiner does not constitute a spray element with adjustable shields as required in claim 11 on appeal, the examiner contends that the claim language is broad and merely calls for adjustability of the shields, that appellants have not recited any specific structure or means that effect the adjustability and, therefore, the broadest interpretation of the claim language would allow for a shield attached to a mobile arm to constitute an adjustable shield (answer, page 4). More specifically, the examiner urges that each of the side walls of housing (64) in Huey (Figs. 3-4) comprise a shield that is adjustable with respect to the polishing pad via movement of the arm assembly (col. 3, lines 52-57).

Like appellants, it is our view that the "spray element" with a plurality of nozzles and one or more adjustable shields arranged about the nozzles as set forth in claim 11 on appeal cannot be broadly construed to include a spray element such as that seen in Huey with fixed shield walls, which are able to move or be "adjusted" only as a result of movement of the entire arm assembly/spray element relative to the rotatable platen (52) and polishing pad (54) of the polishing system. Given that claim 11

is limited to "[a] spray element" *per se* for use in a polishing system, wherein that element comprises "a plurality of nozzles configured to spray the pressurized fluid and one or more adjustable shields arranged about the plurality of nozzles," we consider that it would have been clear to one of ordinary skill in the art that the spray element itself must have shields which are configured to be adjustable relative to the spray element and not the overall polishing system in which the spray element may ultimately be arranged. From our perspective, this understanding and interpretation is the broadest "reasonable" interpretation consistent with appellants' specification. See In re Sneed, 710 F.2d 1544, 1547, 218 USPQ 385, 388 (Fed. Cir. 1983); In re Bond, 910 F.2d 831, 833, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990); and In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997).

Thus, for the above reasons, and those aptly set forth by appellants in the brief, reply brief and supplemental brief, we will not sustain the examiner's rejection of claims 11, 12, 14, 16 and 17 under 35 U.S.C. § 102(e) based on Huey.

Claim 18 on appeal defines a method for cleaning a polishing pad, comprising moving the polishing pad relative to a spray element having fluid openings positioned toward the polishing pad, spraying a pressurized fluid "in a pulsating sequence" from the spray element upon the polishing pad during said moving, and removing matter adhered to the polishing pad. According to the examiner, the recited method "is merely the natural use of the claimed apparatus" (answer, page 4). In further addressing this claim, the examiner urges that the limitation regarding spraying of the pressurized fluid in a pulsating sequence, "would be a matter of intended use because the user can manually or automatically cause the spray to pulsate as a matter of operator choice." On page 6 of the answer, the examiner further contends that the fluid in Huey "can be turned on and off which constitutes pulsating" and that the structure of Huey "can be used as a matter of choice by the operator to accomplish a pulsating of the fluid."

Contrary to the examiner's view, the positively recited step in method claim 18 of "spraying a pressurized fluid in a pulsating sequence" from the spray element upon the polishing pad during moving of the pad for the purpose of removing matter

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adhered to the pad, is not merely a matter of intended use, or the natural use of the claimed apparatus defined in claim 11 on appeal. Moreover, even if the examiner's above-noted comments concerning the capability of the system in Huey to operate by spraying pressurized fluid in a pulsating sequence were true, which may or may not be the case, what is lacking in this reference is any disclosure or teaching of a method wherein a spray element is used to spray a pressurized fluid "in a pulsating sequence" onto a polishing pad for cleaning purposes. As appellants have pointed out in the various briefs, there is nothing in Huey concerning spraying pressurized fluid in a pulsating sequence upon polishing pad (54), and no motivation in Huey to operate the system therein in such a manner.

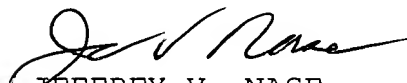
In light of the foregoing, we find that the examiner has not established a *prima facie* case of anticipation with regard to claim 18, or claims 19 through 22 which depend therefrom, and thus conclude that the examiner's rejection of claims 18 through 22 under 35 U.S.C. § 102(e) based on Huey will not be sustained.

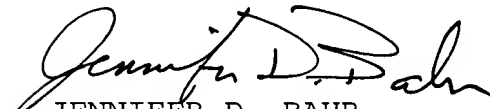
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It follows from the foregoing, that the examiner's decision
rejecting claims 11, 12, 14 and 16 through 22 under 35 U.S.C.
§ 102(e) is reversed.

REVERSED


CHARLES E. FRANKFORT)
Administrative Patent Judge)


JEFFREY V. NASE)
Administrative Patent Judge)


JENNIFER D. BAHR)
Administrative Patent Judge)

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